



September 24, 2020

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**VIA EMAIL (CCTESTIMONY@PORTLANDOREGON.GOV)**

Mayor Ted Wheeler  
Commissioner Chloe Eudaly  
Commissioner Amanda Fritz  
Commissioner Jo Ann Hardesty  
Commissioner Dan Ryan

City of Portland  
1221 SW 4th Avenue  
Portland, OR 97204

**Re: Alamo Manhattan (Applicant) Testimony in Opposition to Appeal: Rebuttal  
LU 20-102914 DZM GW AD: Alamo Manhattan Blocks**

Dear Honorable Mayor Wheeler and Commissioners:

We represent the applicant in the above referenced application (the “Project”), and request that you include this testimony and evidence in the record.

There has been robust participation during the Project’s public process. The Design Commission’s findings, BDS staff reports and technical memos from PBOT and Parks provide detailed analyses of the issues raised, and support for the conclusions that all applicable criteria have been met. We will not repeat those findings here. The purpose of this letter is to offer our rebuttal to testimony that has been submitted. We begin with a summary of issues, followed by a detailed explanation.

Respectfully, we urge Council to reject the appeal and approve Alamo Manhattan’s Project at the October 1 City Council hearing. The Project has evolved throughout the public process; most recently in response to Council’s feedback at the September 10<sup>th</sup> hearing, but also in response to 7 Design Commission hearings and many meetings with staff and stakeholders. The Project’s most significant public benefits include:

- provides more inclusionary housing-compliant affordable housing units than any project to date in the City;

- completes a missing link in the greenway trail that balances habitat enhancement with public recreation; and
- provides significant multi-modal transportation improvements in the South Waterfront.

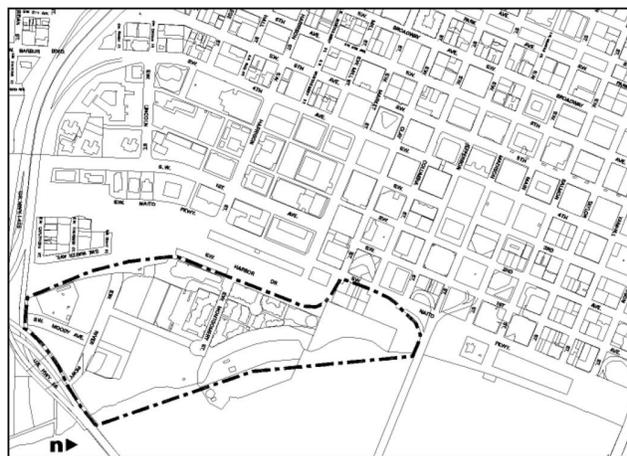
### Summary of Key Issues

#### 1. Graduated Building Height (Design Guideline D2)

##### a. Design Guideline D2 is not Applicable

Central City Fundamental Design Guideline (“CCFDG”) D2 has been cited as a basis for not allowing towers on Blocks 41 and 44, which are the blocks closest to the river. CCFDG D2 does not apply to this site or Project, so all Guideline D2-related comments should be rejected.

Guideline D2 is a special area design guideline that applies “only within the identified special areas” (CCFDG, page 5), which are shown on CCFDG Map 2, and detailed on Map 2.2. The Project is not within the identified special area so Guideline D2 does not apply.



Map 2-2.  
The South Waterfront  
Area

While Maps 2 and 2-2 are clear, not applying CCFDG D2 south of the Marquam Bridge and to the site is consistent with legislative history and the City’s precedent of recent design review approvals for buildings south of the Marquam Bridge.

No testimony or evidence has been offered to explain how CCFDG D2 applies to the site, which is not located within CCFDG Map 2-2.

We believe that the Design Commission’s application of CCFDG D2 to this Project may have been an oversight that is attributable to the similar terms for adjacent, but mutually exclusive, geographic areas. D2 applies to the “South Waterfront Area,” which is located north of the Marquam Bridge. The area south of the Marquam Bridge is subject to the South Waterfront Design Guidelines and Greenway Design Guidelines, a region that is referred to in those guidelines as the “South Waterfront” and was previously referred to as “North Macadam.”

#### **b. Even if D2 Applied, it is Met**

Guideline D2 requires in part: “[g]raduate building heights from the western boundary down to the waterfront,” but does not provide clarity regarding what metric a project’s height must be graduated against. We agree with the Design Commission’s finding that, *if* CCFDG D2 applies to the Project, it is met by requiring the Project design to fit within a district-wide step down toward the river, as implemented in the heights allowed by Map 510-3. In order to ensure that the district is allowed to develop to its planned height and density over time, this step-down pattern is based on potential development heights under the Code, not the as-built heights in the district.

This interpretation is consistent with the existing district context which includes taller towers waterward of smaller building as shown on **Exhibit A, Height Precedent**. The interpretation is also consistent with the CCFDG legislative history which makes clear that guidelines are not prescriptive Code standards and should not be interpreted to drastically reduce height or density limits planned by the Code for an area (which would be the result if Appellant’s rigid block-by-block step down interpretation was implemented). Finally, our and the Design Commission’s interpretation does not “nullify” the design guidelines by removing the Design Commission’s jurisdiction to determine if the Project meets the guidelines. Rather it *provides* the context within which the Design Commission should consider appropriate heights in the district.

#### **2. Tower Design (Guidelines A5, C1 and C4)**

The design guidelines do not protect private views, do not require any particularly shaped tower, do not correlate building design to its use and do not distinguish between areas of the district. The Project’s bar design and dimensions are consistent with precedent in the district. The L-shaped tower is new, which is encouraged by Guideline C4’s instruction to add to the local design vocabulary

#### **3. Access to River**

Testimony during the hearing encouraged adding public access to the river into the Project’s greenway improvements. Alamo Manhattan explored this possibility at length with BDS and Parks staff and determined that access to the river was not appropriate from the Project site because access would conflict with the primary goal of habitat restoration in the South Reach. The Design Commission agreed and found that CCFDG 5, 7, and 8 were met through the Project’s design. The Project’s greenway includes significant habitat restoration, passive open

spaces, opportunities to view the river and a fountain/water feature that is an active play area. These elements balance habitat with human recreation. Public access from the existing concrete wall to a boat dock is not feasible, and it would be detrimental to habitat. An ADA-compliant beach access is also not appropriate because the trail itself and the introduction of humans to this section of the restored riverbank would diminish habitat functions and values.

#### **4. Bonus FAR and Height Eligibility**

The testimony that argued that the greenway does not warrant the bonus FAR or bonus height should be rejected. The criteria do not include any discretion. Instead, because the objective standards are met, the additional FAR and height is allowed.

#### **Detailed Response**

##### **1. Graduated Building Height (Design Guideline D2)**

###### **a. Design Guideline D2 is not Applicable**

Guideline D2 does not apply to the Project because the Project is not within the “South Waterfront Area” (“SWA”) as shown on CCFDG Map 2 and 2.2 (*See CCFDG page 5, “[t]he special area design guidelines apply only within the identified special areas”*). Guideline D2 applies only to areas within the SWA and does not apply to Alamo Manhattan’s Project. The jurisdictional maps clearly show that the South Waterfront Area/Section D2 applies only between the Hawthorne Bridge and Marquam Bridge. The area-specific design guidelines that apply south of the Marquam Bridge, and to this Project, are the South Waterfront Design Guidelines and South Waterfront Greenway Design Guidelines.

While Maps 2 and 2-2 are clear, not applying CCFDG D2 south of the Marquam Bridge and to the site is consistent with legislative history and the City’s past practice. We have reviewed a recent decisions for projects south of the Marquam Bridge, such as the prior approvals for the subject site (LU 16-283373 DZM which covers Blocks 42 and 45 and LU 16-283375 DZM, which covers Blocks 41 and 44) and The Ella (LU 17-110666 DZM), and they do not apply CCFDG D2. The legislative history outlined in **Exhibit B, Legislative History of CCFDG D2 Special Area Guidelines for the South Waterfront Area and South Waterfront Design Guidelines and Greenway Design Guidelines**, supports the conclusion that the Marquam Bridge has always been a dividing line between the sets of design guidelines. The special area guidelines for the “South Waterfront Area” under CCFDG section D currently apply and have always applied only north of the Marquam Bridge, while the South Waterfront Design Guidelines and Greenway Design Guidelines currently apply and have always applied only south of the Marquam Bridge.

**b. In the Alternative, if Guideline D2 Applies, it is Met**

The Design Commission found that the Project complied with Guideline D2, and we agree with the Design Commission’s compliance reasoning.

Guideline D2 provides:

**D2. South Waterfront Area.** Develop a pedestrian circulation system that includes good connections to adjacent parts of the city and facilitates movement within and through the area. Size and place development to create a diverse mixture of active areas. Graduate building heights from the western boundary down to the waterfront. Strengthen connections to North Macadam by utilizing a related system of right-of-way elements, materials, and patterns.

The text of Guideline D2 is ambiguous, with some commenters interpreting it to apply on a block-by-block basis, and the Design Commission determining that the reference to graduated height across the district is accomplished through height limits within the code.

The operative text is “graduate building heights from the western boundary down to the waterfront.” Design Commission and BDS staff explain that this graduation of height is applied first through the height allowances in the zone (Map 510-3), which are highest to the west and graduate down to the east. This guideline does not require that every building on each block step down to the next and the next and the next as development moves towards the river. Rather, the intent of the purpose is to ensure that, overall, South Waterfront achieves a step down to the river by construction of projects consistent with allowed zoning heights.

South Waterfront’s built environment and remaining potential development further support the conclusion that Guideline D2 does not require a building to step down from the building to its west. The attached **Exhibit A, Height Precedent** shows that existing smaller buildings (6 or 7 stories) line the western portion of the district, while taller towers are interspersed on waterward sites. A block-by-block step down requirement would not have allowed this development pattern and would drastically limit density on the remaining waterward blocks.<sup>1</sup>

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<sup>1</sup> The Council established precedent for interpreting discretionary factors relating to height step-downs under *Preserve the Pearl v. City of Portland*, 72 Or LUBA 261 (2015), that should be followed in Council’s consideration of the Alamo Manhattan Project. In *Preserve the Pearl*, a height bonus was allowed for the Heartline project if the project was consistent with the purpose statement in PCC 33.510.205.A, which described the maximum heights as serving several purposes, including “...protecting views, creating a step-down of building heights to the Willamette River...” This is similar to the guideline to “[g]raduate building heights from the western boundary down to the waterfront” under CCFDG D2, and the City should interpret the provisions consistently, and as affirmed by LUBA.

LUBA upheld the City’s approval of the height bonus and found that a block-by-block step down toward the river based on existing building heights was not required; instead a context-driven step down scheme based in the potential development heights authorized by the Code was acceptable. The City’s interpretation not to require a

This district-wide height graduation is reinforced by evaluating a particular building's height. Here, the buildings on the eastern blocks (Blocks 41 and 44) step down from the 250' allowed bonus height to a +45' podium which is well below the 75' height limit along the river. Overall the building heights on Blocks 41 and 44 step down from the west towards the river.

The PCC 33.825.035 and other CCFDGs provide context for interpreting Guideline D2. All of the applicable guidelines are subjective and require the exercise of balancing and judgement. Design guidelines are intended to state broad design objectives and to provide guidance; they should not be construed as prescriptive standards.

PCC 33.825.035 identifies height as one of several factors that may be evaluated during Design Review. However, these factors are not referenced in the approval criteria description at PCC 33.825.055, which strictly limits the approval criterion to compliance with applicable design guidelines. Therefore, to the extent that height is a factor that may be evaluated during Design Review, any consideration of height must be directly connected to the applicable design guidelines. The City has consistently applied this discretion by evaluating the design proposed within the allowed building envelope, and whether it meets the guideline.

#### **i. CCFDG Legislative History**

The CCFDG were originally enacted in 1990 under Ordinance 163325 (the "Original CCFDG"). This ordinance contains legislative history regarding the intent and purpose of the CCFDG and how the guidelines were designed to be used and interpreted. Later revisions to the CCFDG in 2001 and 2003 did not contain this same history since the basic framework and premise of the CCFDG had already been adopted.

The Original CCFDG explain that "fundamental design guidelines provide the constitutional framework for all design review areas in the Central City," and that "[t]hey are to be used to coordinate and enhance the diversity of activities taking place in the Central City. Many ways of meeting a particular guideline exist. Since it is not the City's intent to prescribe any specific design solution, the Design and Historical Landmarks Commissions encourage a diversity of imaginative solutions to considerations addressed by the guidelines." (Original CCFDG page 21). The Original CCFDG further state that "[i]t is important to emphasize that Design Review goes beyond minimal design standards and is viewed as an opportunity for applicants to propose new and innovative designs. The design guidelines are not intended to be inflexible requirements. Their mission is to aid project designers in understanding the principal expectations of the City concerning urban design." Furthermore, the epilogue of the Original CCFDG explains that the guidelines are not intended to impede dense development planned

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step-down gave "effect to the City's decision to designate a large area of the River District as eligible for a housing height bonus." LUBA found that the Code was ambiguous and upheld the City's decision that "the totality of the situation" rather than individual items, were consistent with the required purpose. LUBA further found that the City's interpretation was not inconsistent with the purposes or policies underpinning the regulations.

under the Code. “Functionally, projects are encouraged to develop to the full potential of the property as is permitted by the Central City Plan and the Plan District regulations that deal with land use, land density, project height, development bonuses, etc.” (Original CCFDG page 38). The Original CCFDG make clear that the guidelines must not be interpreted to reduce the planned-for density across an entire area.

This legislative history supports the context discussion above and the conclusion that Guideline D2 is implemented through the height allowance in Map 510-3 and is not a block-by-block prescriptive standard.

In sum, even if the ambiguous Guideline D2 applies to the Project, it is met by requiring the Project design to fit within a district-wide step down toward the river. In order to ensure that the district is allowed to develop to its planned height and density over time, this step-down pattern is based on potential development heights under the Code, not the as-built heights in the district. This interpretation is consistent with the existing district context which includes taller towers waterward of smaller building. The interpretation is also consistent with the CCFDG legislative history which makes clear that guidelines are not prescriptive Code standard and should not be interpreted to drastically reduce height or density limits planned by the Code for an area. Finally, this interpretation does not “nullify” the design guidelines by removing the Design Commission’s jurisdiction to determine if the Project meets the guidelines; rather it *provides* the context within which the Design Commission should consider appropriate heights in the district.

## **2. Tower Design (Guidelines A5, C1 and C4)**

Public comments have encouraged design changes that will preserve views from private spaces. The design guidelines that are cited are CCFDG A5, C1 and C4, which provide:

**A5. Enhance, Embellish, and Identify Areas.** Enhance an area by reflecting the local character within the right-of-way. Embellish an area by integrating elements in new development that build on the area’s character. Identify an area’s special features or qualities by integrating them into new development.

**C1. Enhance View Opportunities.** Orient windows, entrances, balconies and other building elements to surrounding points of interest and activity. Size and place new buildings to protect existing views and view corridors. Develop building façades that create visual connections to adjacent public spaces.

**C4. Complement the Context of Existing Buildings.** Complement the context of existing buildings by using and adding to the local design vocabulary.

The comments argue that the character of the area is rounded sculpted towers that are placed to maximize private views and that the Project’s bar towers cannot rely upon precedent elsewhere

in the district because the other bar towers do not block as many views and they are not all residential towers. All of these arguments should be rejected.

The guidelines do not expressly or implicitly protect private views. The City has consistently interpreted and applied Guideline C1 so that it applies only to designated view corridors. As a result, dense urban development in the South Waterfront impacts private views from nearby buildings. See **Exhibit C, View Precedent**. Alamo Manhattan's slide presentation to City Council during the September 10, 2020 hearing included images of how towers placement on Blocks 41 and 44 complements separation among existing buildings.

There is no support in the applicable design guidelines that the character of the South Waterfront is a sculpted or rounded tower. CCFDG A5 applies throughout the Central City and references the character of an area. When there are adopted geographically specific design guidelines, those guidelines define character of the particular area. In some circumstances the character is narrowly defined, such as the "warehouse" character of the Pearl District in River District Design Guideline A5-1. The area-specific design guideline that applies here and informs the "character" referred to in CCFDG A5 is South Waterfront Design Guideline A5-1, which is less prescriptive than the Pearl District. The area-specific design guideline that elaborates on CCFDG A5 provides:

**South Waterfront Design Guideline A5-1: Consider South Waterfront's History and Special Qualities**

**Guideline**

Consider emphasizing and integrating aspects of South Waterfront's diverse history in new development proposals.

When included in the development proposal, integrate works of art and/or water features with site and development designs.

The background section of the guideline describes the "maritime industrial character of South Waterfront" and suggests that "functional building elements, such as awnings windows, doors and exterior lighting, can be creatively designed as identifying features to strengthen the character of South Waterfront." The suggestions for accomplishing A5-1 are (1) Reusing or recycle elements of South Waterfront's past in new designs; (2) Combining works of art, stormwater management systems, and water features; (3) Developing projects to integrate and enhance historic features; and (4) Using district elements and/or artifacts as inspiration for new works of art.

What is conspicuously absent in the guidelines is any support for describing the character of South Waterfront as including any particular shaped tower, additional setbacks or any other

design feature targeted at protecting private views. The appellants efforts to somehow correlate the shape of a tower to its location within the district or based upon its use also has no support in the guidelines.

To the extent that character can be interpreted to mean the shape of a tower, in the absence of direction in the guidelines, that character is informed by the dimensional standards allowed within the district and other buildings within the district. The dimensional standards require a narrow north-south façade and there is no maximum east-west dimension, which allows for views from the west hills to the river. The Project towers' north-south widths are less than the 125' maximum (Block 41 is 65'-6" and Block 44 is 121'-1") and the east-west tower dimensions are similar to other towers in the district. The bar tower design has precedent in the district, as shown during the applicant's slide show to Council on September 10, 2020. The L-shaped tower is new, which is encouraged by Guideline C4's instruction to add to the local design vocabulary.

### **3. Public Access to the River (Guidelines 5, 7 and 8)**

Recent public testimony has suggested that public access to the river in the Project's greenway improvements may be desirable. The design guideline that discusses public access is South Waterfront Greenway Design Guideline 5, which provides:

**5. Enhance the riverbanks by directing human access and providing bank stabilization that improves ecosystems.** Utilize riverbank stabilization strategies that enhance the river and riverbank ecosystems. Where appropriate, integrate public access to the water that is safe and supportive of adjacent riverbank areas. Provide clearly identified river access within appropriate locations, reducing riparian habitat intrusion.

Emphasis added.

As we explained in our September 17 testimony, the primary objective of the guideline is to enhance the river and riverbank ecosystems. Access is a secondary objective, and it may be introduced only "where appropriate." The purpose of this rebuttal testimony is to provide additional support for the conclusion that river access is not appropriate here because the focus of this reach of the river has primarily been habitat restoration.

The Greenway Development Plan (GDG) is described in Section IV, Guidelines 7 and 8 of the South Waterfront Design Guidelines and South Waterfront Greenway Design Guidelines. The GDP is the vision and concept plan for the entire South Waterfront Greenway and strives to balance the needs of the public and the health of the Willamette River. The GDP accomplishes this by approaching each reach of the river differently (Guideline 7) and by having a guideline dedicated to creating and enhancing habitat (Guideline 8).

The GDP is the best source for assessing whether river access is appropriate in this location, which is within the South Reach. The GDP supports the conclusion that access to the river at the

Project site is not appropriate because of the disruptive impacts it would have on habitat restoration, which is the primary focus of the South Reach. The GDP considered a possible boat ramp, but as detailed in testimony by Urban Greenspaces Institute, the current data supports that such a ramp would be detrimental to efforts to improve fish and wildlife habitat. Some relevant sections of the GDP include (emphasis added):

### **Guideline 7-1 define and strengthen the reaches**

The GDP consists of three primary geographic areas: the North, Central, and South reaches. Each reach is proposed to have its own unique character and each is intended to focus on different functions or aspects of the plan.

#### **South Reach.**

This reach presents similar opportunities to restore various habitat conditions as are present in the North Reach. Extending from SW Lane Street to the River Forum Building at the southern end of the district, this reach is envisioned to include a mix of highly enhanced habitat areas while also providing opportunities for human interaction with the rivers edge though an overlook or perhaps light watercraft boat ramp. As with the other reaches, the bicycle and pedestrian trail network circulates though this reach and is supported with occasional places for people to sit and enjoy the greenway and river

\* \* \*

### **Guideline 7-3 Define and strengthen the South Greenway Reach**

#### **Background**

The South Greenway Reach extends from SW Lane Street to the River Forum Building. Cottonwood trees on Ross Island's shore dominate the view from the riverbank. This portion of the greenway is intended to feature less active gathering spaces and cater to users moving through the greenway, as well as an anticipated high intensity of adjacent residential development. This area was once home to large sawmills that for decades processed raw timber which floated down the Willamette bundled together in distinctive rafts. Piles of lumber were stacked in geometric patterns behind the mill structures and waste sawdust was burned in unique conical 'wigwam' burners. Material choices and forms for future design details in this reach should reflect this history. The river's edge at Lowell will provide an opportunity for a variety of habitats including coves, tree groves and shallow water environments. The primary open space of the South Greenway Reach should be located at the terminus of SW Lowell Street. A lawn will offer quiet, passive recreation opportunities and views of Ross Island. This space is envisioned as a neighborhood use area including a play area and restroom. The GDP envisioned a series of historically evocative log raft platforms on this lawn and elsewhere in the South Greenway Reach.

\* \* \*

**Guideline 7-3 may be accomplished by:**

1. Designing areas to offer quiet, passive recreation and views of Ross Island and the Willamette River.

\* \* \*

**Guideline 7-3 may be accomplished by:**

4. Creating a neighborhood use area, including a play area and restroom.



*This landscape feature creates a place for interaction among all age groups. The use of water as a play feature, attracts many visitors, especially children. A simple blend of stone and lawn materials is a durable option for heavily-used areas. Moveable chairs provide informal and ever-changing seating for adult supervision.*

The Project's greenway includes significant habitat restoration, passive open spaces, opportunities to view the river and a fountain/water feature that is an active play area. These elements balance habitat with human recreation. Public access from the existing concrete wall to a boat dock is not feasible because even with seismic upgrades the public risk cannot be mitigated, and the dock would be detrimental to habitat. See **Exhibit D, Willamette Greenway Concrete Pier**. An ADA-compliant beach access is also not appropriate because the trail itself and the introduction of humans to this section of the restored riverbank would diminish habitat functions and values.

#### 4. Bonus FAR and Height Eligibility

The testimony that argued that the greenway does not warrant the bonus FAR or bonus height should be rejected. The criteria that award bonus FAR and height are prescriptive standards that do not include discretion. Instead, if the objective standards are met, the additional FAR and height is allowed. Blocks 41 and 44 each include 2,500 SF of additional public open space abutting the greenway per PCC 33.510.210.C.10, which affords each building 7,500 SF of bonus FAR, thus unlocking the additional 125' of height. Also see April 2017 Zoning Code Sections 33.510.210.B and 33.510.210.G. There is no basis to provide less FAR or height based upon a subjective opinion about public benefit. Similarly, baseless allegations about whether public money was offered to improve the greenway is also irrelevant. However, so that any ambiguity is resolved, Alamo Manhattan's concerns about using the concrete pier as a public amenity was not based upon whether public dollars could be available. Instead, the expert analysis is that from a design perspective there is not a way to seismically upgrade the concrete pier to the extent that the risk to the public is acceptable. **Exhibit D, Willamette Greenway Concrete Pier.**

One of the objective criteria for earning bonus FAR is the greenway must be installed before an occupancy permit for any building permit using the bonus FAR is issued. PCC 33.510.210.C.10.h. Additionally, the Project site's land division condition of approval C2 requires the installation of a greenway trail prior to the first occupancy permit. LU 17-160442 LDS AD. Finally, Alamo has testified that it intends to construct the greenway during the first phase of construction. We believe that the testimony that has raised concerns about the timing of the greenway construction is not aware of the code limitations and condition of approval; those concerns have already been addressed.

#### Conclusion

Respectfully, we urge Council to reject the appeal and approve Alamo Manhattan's Project at the October 1 City Council hearing.

Very truly yours,



Dana L. Krawczuk

cc: Staci Monroe, BDS  
Alamo Manhattan

Mayor Ted Wheeler and City Commissioners  
City of Portland  
September 24, 2020  
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**Exhibits:**

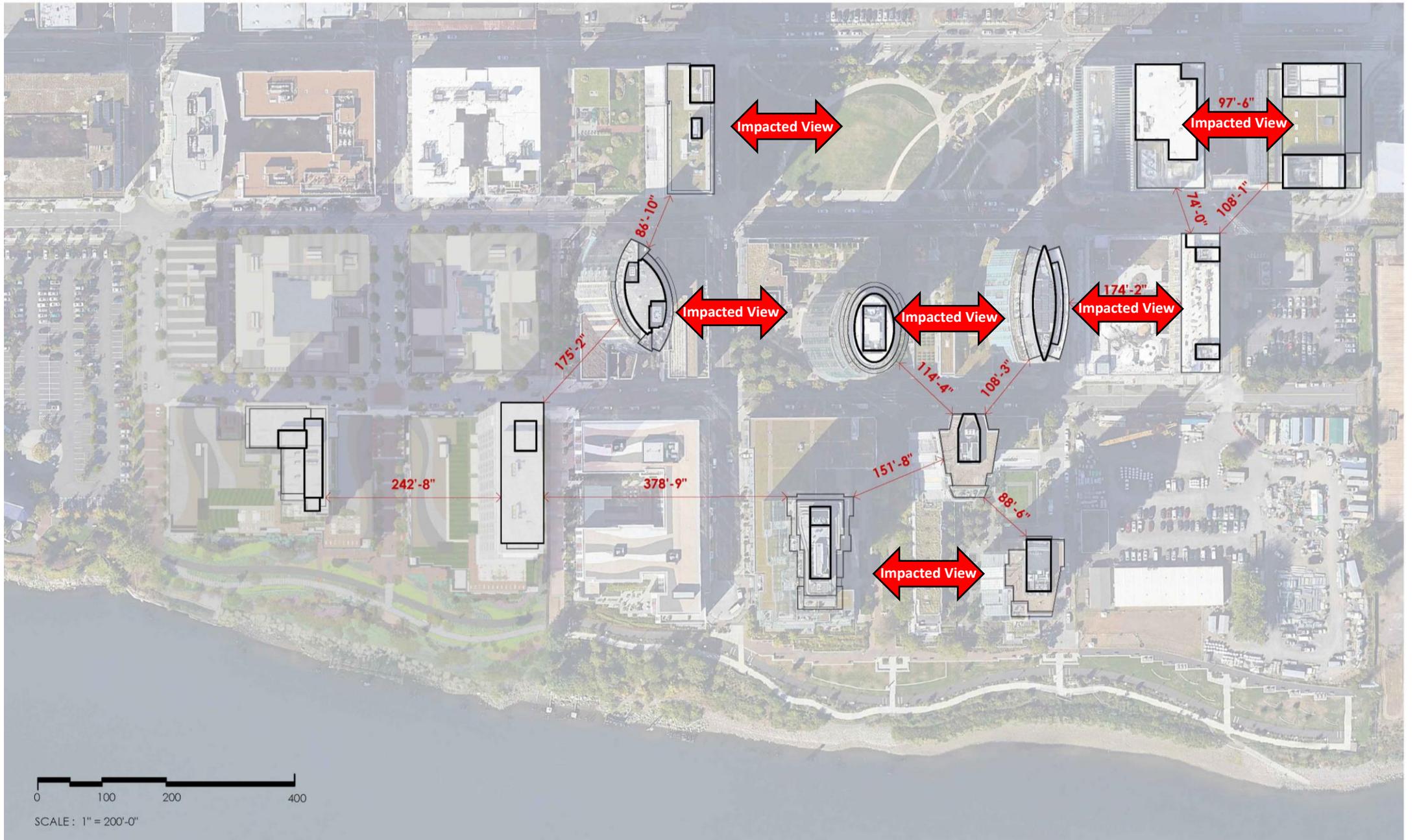
Exhibit A: Height Precedent within the South Waterfront District

Exhibit B: Legislative History of D2 Special Area Guidelines for the South Waterfront Area and South Waterfront Design Guidelines and Greenway Design Guidelines

Exhibit C: View Precedent within the South Waterfront District

Exhibit D: Willamette Greenway Concrete Pier







# Memorandum

Page 1

To:	Wade Johns	From:	Nick Paveglio, P.E. Brett A. Shipton, P.E., G.E.
Company:	Alamo Manhattan Properties, LLC	Date:	January 31, 2020
Address:	3012 Fairmount Street, Suite 100 Dallas, TX 75201		
cc:	n/a		
GDI Project:	AlamoMan-6-12		
RE:	Willamette Greenway Concrete Pier Alamo Manhattan Blocks Portland, Oregon		

This memorandum discusses the extreme geotechnical challenge associated with preserving the concrete pier in the Willamette Greenway adjacent to Block 44 of the proposed Alamo Manhattan Blocks development in Portland, Oregon. The pier is located at the north end of the stacked concrete block seawall and is not in service. Based on explorations and analysis, the subsurface soil below the pier is subject to liquefaction and associated lateral ground displacement toward the Willamette River during a seismic event.

Mitigation of lateral ground displacement requires installation of a soil improvement buttress between the pier and the river. Because the pier is located at the riverbank there is not sufficient space to install a conventional buttress. Provided it were possible to construct a buttress, a code exception would be required to encroach on the Willamette Greenway setback established approximately 40-feet from the top of the riverbank.

Alternatives to a conventional buttress are experimental and expensive, involving structural modification of the pier and anchorage to buried elements behind a buttress outside of the greenway setback. If an anchorage system was able to be designed and installed to resist the immense lateral forces, failure due to differential liquefaction settlement between the wall and anchorage location would remain a possibility. In our opinion, attempting to preserve the existing concrete pier would be cost prohibitive and involve unconventional approaches that could risk public safety.

NNP:BAS:sn

One copy submitted (via email only)

Document ID: AlamoMan-6-12-013120-geom-concrete\_pier.docx

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EXPIRES: 12/31/20